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10/718,766

11/21/2003

Todd J. Smith

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02/24/2005

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HARTFORD, CT 06103

EXAMINER

PAYNE, SHARON E

ART UNIT

PAPER NUMBER

2875

DATE MAILED: 02/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/718,766

Applicant(s)

SMITH, TODD J.

Examiner

Sharon E. Payne

Art Unit

2875

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-13 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1, 7-9 and 11 is/are rejected.
- 7) ☒ Claim(s) 2-6, 10, 12 and 13 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 1103.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Information Disclosure Statement

1. The listing of references in the specification is not a proper information disclosure statement. 37 CFR 1.98(b) requires a list of all patents, publications, or other information submitted for consideration by the Office, and MPEP § 609 A(1) states, "the list may not be incorporated into the specification but must be submitted in a separate paper." Therefore, unless the references have been cited by the examiner on form PTO-892, they have not been considered.

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1, 7-9 and 11 are rejected under 35 U.S.C. 103(a) as being unpatentable over Thillays et al. (U.S. Patent 4,742,432) in view of Perlo et al. (U.S. Patent 6,641,282).

Regarding claim 1, Thillays et al. discloses LEDs (column 3, lines 52-52) having an optical axis extending from an area of light emission (Fig. 2) and a composite reflector comprising a row of substantially circular (Fig. 2) concave reflecting surfaces (Fig. 4), each said concave reflecting surface substantially surrounding one said area of light emission (Fig. 4) and extending outwardly to an upper edge (Fig. 4). Thillays et al. does not disclose longitudinal reflecting surfaces.

Perlo et al. discloses a pair of longitudinal reflecting surfaces (both sides of Fig. 1) extending axially and outwardly from lower limits adjacent the upper edges and laterally spaced apart by the row of substantially circular reflecting surfaces to define a trough axially thereabove (both sides of Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Perlo et al. in the apparatus of Thillays et al. to "enable a low luminance, at the same time ensuring a high efficiency" (column 1, lines 15-16, of Perlo et al.).

Concerning claim 7, Thillays et al. discloses the circular concave reflecting surfaces being defined by a parabola rotated about the optical axis (column 2, lines 1-5).

Regarding claim 8, Thillays et al. discloses the parabola having a focus coincident with the area of light emission (column 2, lines 1-5). (For a parabola to be a collimating element, the light source has to be at the focus.)

Concerning claim 9, Thillays et al. discloses an array of LEDs (Figs. 2 and 4), each said LED comprising a die from which light is emitted (Fig. 4, center of hemisphere) and a lens covering the die (hemisphere, Fig. 4), the lens having an optical axis originating at the die (Fig. 4), the LEDs being arranged along a line extending through the dies to form a linear LED array having a length (Fig. 2) and a reflector body (Fig. 4, curved portions) having a back side (portion by LED, Fig. 4) defining a plurality of openings for receiving the lens of each LED (Fig. 4, portion surrounding LED) and a front side defining a composite reflecting surface comprising a row of concave reflecting surfaces (Figs. 2 and 4), each said concave reflecting surface defined by a parabola (column 2, lines 1-5) having a focus coincident with the die of a received LED (column 2, lines 1-5) and rotated about the optical axis of the received LED (Figs. 2 and 4), the reflector extending axially above the LED to a rim having a diameter (Figs. 2 and 4). Thillays does not disclose longitudinal reflecting surfaces.

Perlo et al. discloses a pair of longitudinal reflecting surfaces extending upwardly and outwardly from a lower edge (both sides of Fig. 1) substantially tangent to the rims (Fig. 2), the longitudinal reflecting surfaces being laterally separated from each other by a distance substantially equal to the diameter of the rims (Figs. 1 and 2), the pair of longitudinal reflecting surfaces extending substantially the length of the linear LED array and defining a trough above the row of concave reflecting surfaces (Fig. 1).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Perlo et al. in the apparatus of Thillays et al. to "enable a low luminance, at the same time ensuring a high efficiency" (column 1, lines 15-16, of Perlo et al.).

Regarding claim 11, Thillays et al. does not disclose a longitudinal reflecting surface. Perlo et al. discloses the longitudinal reflecting surface being a linear (Fig. 1) substantially parabolic surface defined by the parabola projected along the line extending through the dies (Fig. 3).

It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the configuration of Perlo et al. in the apparatus of Thillays et al. to "enable a low luminance, at the same time ensuring a high efficiency" (column 1, lines 15-16, of Perlo et al.).

Allowable Subject Matter

4. Claims 2-6, 10 and 12-13 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

5. The following is a statement of reasons for the indication of allowable subject matter. The prior art fails to disclose a warning light having the following features:

- 1) a plurality of longitudinally extending convex ribs as recited in claim 2;

2) a plurality of longitudinally extending convex ribs arranged on a parabola projected along the length of the array as recited in claim 3;

3) a plurality of longitudinally extending convex ribs, each rib having a length and a different width as recited in claim 4;

4) a plurality of longitudinally extending convex ribs, each rib having a length and defined by a radius of curvature perpendicular to said length as recited in claim 5;

5) a plurality of convex ribs as recited in claim 10;

6) a plurality of convex ribs, each rib having a different width measured perpendicular to the array and along the reflecting surface as recited in claim 12; and

7) a plurality of ribs with a convex surface defined by a different radius of curvature as recited in claim 13.

Conclusion

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Sharon E. Payne whose telephone number is (571) 272-2379. The examiner can normally be reached on regular business hours.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Sandra O'Shea can be reached on (571) 272-2378. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

6. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

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